CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH
GILES S. PORTER, M.D., Director

Weekly Bulletin

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Entered as second-class matter February 21, 1922, at the post office at Sacramento, California, under the Act of August 24, 1912.
Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917.

Vol. X, No. 13
May 2, 1931
GUY P. JONES
EDITOR

Septic Sore Throat

By W. H. KELLOGG, M.D., Chief, Bacteriological Laboratory

The first outbreak of septic sore throat reported in this country was that of Boston in 1911. Since that time a number of epidemics have occurred, probably fifty or sixty altogether.

The disease is caused by a particular strain of hemolytic streptococcus, the streptococcus epidemicus, and is transmitted through the contamination of milk either by a human case or carrier, or through the contamination of milk either by a human case or carrier, or through the existence of an infected udder in one of the cows supplying the milk. The mastitis of the cow when caused by streptococcus epidemicus is believed to be always from a human source; certainly if ordinary garget in cows can give rise to septic sore throat in man, one would expect many more cases and epidemics than are known to occur. Septic sore throat is much more common in the eastern states than on the west coast and fully half of the reported epidemics have occurred in New York and Massachusetts. This distribution helps to confirm the idea of a specific strain of organism for there is no reason to believe that garget is any less prevalent in California than elsewhere.

The disease is an important public health matter, not only because of the mortality, which is from 2 to 5 per cent, but also because of the sudden and widespread character of the outbreaks, the secondary complications that frequently occur and the relationship of the disease to the milk supply. The number of cases occurring in a single localized epidemic is limited only by the extent of the milk distribution from a given source and hundreds, even thousands, may be involved in a single outbreak. Transference from person to person seems to be unimportant and it is doubtful if epidemics are ever developed in this way.

Growth in milk or possibly residence for a short time in the udder of the cow apparently is required to activate the virus. Perhaps it is only a matter of dosage, and the multiplication of the streptococci in the milk provides the necessary number to gain entrance into the tissues of the new victim.

So far, only one epidemic of septic sore throat has been noted in California, that of Pleasanton in 1926. Recently, the occurrence of a small group of cases in southern California with the identification of human carriers of the streptococcus epidemicus, caused the State Board of Public Health to make the disease reportable, in order that more complete information of its prevalence may be obtained and measures taken to prevent its spread.

To aid physicians in the intelligent reporting of this disease, a brief discussion of its clinical characteristics is in order. The infection is unfortunately not a well marked clinical entity, in which respect it resembles influenza. The latter is easily recognizable when it occurs epidemically, but who can say with certainty as to a given individual case, whether it is influenza or not. So it is with septic sore throat; there is nothing distinctive in the clinical picture.

After an incubation period of two or three days the onset is sudden, frequently with a chill, prostration, and there is usually a moderate leucocytosis. Patients frequently complain of headache and aching of the limbs, so that influenza may be suspected. Localization in the throat occurs within a few hours and the extent of local disturbance ranges all the way from a simple injected pharynx to an extremely painful condition of the tonsils covered with a slimy grayish membrane suggesting diphtheria. A very common complication is adenitis of the cervical and submaxillary lymph glands. Indeed, outbreaks of the disease have been identified bacteriologically in which the throat symptoms were practically absent and fever and glandular enlargement were the only symptoms. Glandular fever or infectious mononucleosis may, therefore, be a confusing factor in diagnosis, particularly since there is an anginal type that may resemble any sore throat such as diphtheria, scarlet fever, follicular tonsillitis or Vincents angina. The differential diagnosis rests on the blood differential count and the bacteriological examination of throat cultures. The cultures can not be made from ordinary swabs as sent in for diphtheria, but require the inoculation of special culture media at the bedside and the rapid transfer of cultures to the laboratory. In infectious mononucleosis there is an increase of large mononuclear cells in the blood, sometimes with an almost entire absence of small lymphocytes. It should be remembered that there may be at the outset of glandular fever an increase of the white count, with a polymorphonuclear leucocytosis, but with convalescence a leucopenia develops with a marked relative increase of the mononuclear cells. Another condition to be mentioned in connection with differential diagnosis is agranulocytic angina. In this disease, which is characterized by enlarged glands and a severe angina, there is usually a leucopenia and a complete disappearance of polymorphonuclear leucocytes, the predominating cell being small lymphocytes.

The complications and sequelae of septic sore throat are numerous and may include almost any of the clinical manifestations of streptococcic invasion, such as otitis media, abscesses, nephritis, erysipelas and peritonitis.

Septic sore throat undoubtedly occurs, as does influenza, endemically, a case at a time, having their origin in direct contact with other cases, but it is only when the milk supply becomes infected that the epidemic form appears and the disease becomes easily recognizable. It follows, therefore, that doctors are not expected to identify and report a sporadic case, which, indeed, is impossible, but the occurrence of a number of cases in their practice should be brought to the attention of the health officer and a card for each individual case sent in.

PREVENTION

According to our present knowledge of the subject, the infection is of human origin but inoculation of the udder of the cow is a prerequisite to the appearance of human cases in epidemic form. The cause of the disease is the streptococcus epidemicus which is found in the throats of human cases, in the milk of cows with garget found in herds connected with human outbreaks, and in the throats of human "carriers." Whether or not the disease spreads from cow to cow is not definitely known, but the evidence is against it so far. Whether or not all strains harbored by human carriers are virulent and capable of infecting cattle is likewise not known. A temperature of 60 degrees Centigrade for twenty minutes kills the streptococcus epidemicus; therefore efficiently pasteurized milk is safe and if all milk were pasteurized there would be no problem. But all milk is not pasteurized nor is it, according to the belief of some, desirable that it should be. Therefore, measures must be invoked for the protection of persons using certified and other grades of raw milk. All persons suspected of carrying pathogenic streptococci should be excluded from contact with cows and barred from occupations having to do with the handling of raw milk for human consumption. Rigid inspection of the cows for evidence of garget should prevail and the dairymen should give attention to lesions and injuries of the teats, applying treatment to favor prompt healing Experimentally, cows have been infected through slight abrasions of the teats.

It is to the interest of the dairy industry and the public that full cooperation be given health officers and physicians in the discovery of early cases of sore throat among the milk consumers, in the prompt exclusion of suspected individuals from dairy employment until proven harmless, and the prompt exclusion of the milk of a cow suspected of having anything wrong with the udder.

It can not be authoritatively stated at the present time whether or not an intensive search for human carriers would justify the added burden that would be imposed on the laboratories. Technical difficulties stand in the way, one of which is the frequency of streptococci of some sort in throats generally, requiring expert laboratory service for their differentiation.

Perhaps the most valuable laboratory procedure for prevention of septic sore throat is the examination of milk from individual cows. Most public health laboratories are too poorly supported in the matter of a sufficient number of bacteriologists to undertake even the minimum amount of work that would be required to take care of the community they serve.

Finally, for the individual who is determined to protect himself from the possibility of infection, pasteurized milk is the only complete safeguard.

PLAN FOR MATERNITY CARE

A conference on a plan for maternity care was held by public health nurses in Northern California counties, April 13, in Chico. Mary E. Davis, Supervising Nurse of the Bureau of Child Hygiene in the State Department of Public Health, conducted the conference. Thirteen nurses from eight counties were in attendance. This is the first of a series of all-day conferences which have been planned by the Bureau of Child Hygiene for the benefit of public health nurses in the field.

Exhibit materials for the use of nurses in furthering the plan was displayed. These consisted of a miniature exhibit picturing a public health nurse's visit into the home of a new mother, showing the preparations that had been made previously for a home delivery and after care. There were also shown samples of infant and maternal welfare publications from various states and organizations as well as a display of clothing for the expectant mother and for the infant.

The following nurses attended the Chico conference:

Frances Surtzer, Sutter County.
Maude Ellis, Yuba County.
Dorothy Owens, Modoc County.
Ruth McCulloch, Plumas County.
Hilda Willard, Butte County.
Freda Miller, Shasta County.
June Peck, Shasta County.
Rebecca Mathews, U. S. Indian Service, Lassen County.
Emily Davis, Nevada County.
Pauline Marsden, Marysville Elementary Schools.
Ellen Gillard, Susanville Elementary Schools.
Pearl Connan, Part-time, Lincoln.
Ruth W. Hay, Bureau Child Hygiene.

NEW HEALTH OFFICER FOR MADERA COUNTY

Dr. Lee A. Stone has been appointed Health Officer for Madera County. The health department of this county is operated upon a full-time basis.

To study the phenomena of disease without books is to sail an uncharted sea; while to study books without patients is not to go to sea at all.—*Osler.*

EXAMINATION OF PUBLIC HEALTH NURSES

The next examination for public health nursing certificate will be held in San Francisco and Los Angeles on Saturday, May 16, 1931.

Application blanks can be obtained from any office of the State Department of Public Health and should be on file in the San Francisco office of the department not later than May 9.

Public Health Nursing Committee,
By Adelaide Brown, M.D., Chairman.

Unlike tuberculosis, cancer is not a single disease, but a great group of diseases of very different causation and course. The body is made up of microscopic cells, arranged in an orderly way and producing useful organs. Cancer is simply an excessive, destructive overgrowth of some of these cells, producing the many forms of cancer.—*James Ewing, M. D.*

MORBIDITY *

Diphtheria.

56 cases of diphtheria have been reported, as follows: Fresno 9, El Centro 2, Los Angeles County 1, El Monte 1, Glendale 1, Los Angeles 26, Monrovia 1, Lynwood 1, South Gate 1, Merced County 1, Orange 1, Sacramento 1, Ontario 1, San Bernardino 1, San Diego 2, San Francisco 3, Stockton 1, Ventura County 1, Fillmore 1.

Influenza.

276 cases of influenza have been reported, as follows: Oakland 1, Kern County 1, Bakersfield 1, Los Angeles County 2, Alhambra 1, Long Beach 1, Los Angeles 32, Pasadena 2, San Gabriel 1, South Pasadena 1, Monterey Park 1, Santa Ana 3, Sherman Institute, Riverside 210, Sacramento 2, Coronado 1, San Francisco 12, Stanislaus County 3, Ventura County 1.

Scarlet Fever.

154 cases of scarlet fever have been reported, as follows: Alameda 1, Oakland 9, Piedmont 1, Fresno County 2, Fresno 2, Glenn County 1, Orland 2, Imperial County 3, El Centro 2, Kern County 1, Los Angeles County 11, Claremont 1, Compton 1, El Segundo 3, Glendale 1, Huntington Park 1, Inglewood 2, Long Beach 7, Los Angeles 26, Pasadena 1, Pomona 2, Hawthorne 1, South Gate 5, Gardena 2, Anaheim 1, Placentia 1, Sacramento 3, San Bernardino County 3, Ontario 1, San Diego 1, San Francisco 7, San Joaquin County 7, Stockton 4, San Luis Obispo 1, Redwood City 1, Lompoc 2, Santa Barbara 18, Santa Maria 1, San Jose 1, Vallejo 1, Watsonville 1, Tulare County 4, Visalia 1, Oxnard 1, Ojai 1, Yolo County 3, Davis 1, Woodland.

Measles.

1558 cases of measles have been reported, as follows: Alameda County 10, Alameda 25, Albany 17, Berkeley 146, Emeryville 3, Hayward 2, Livermore 10, Oakland 109, Piedmont 12, Butte County 2, Chico 1, Contra Costa County 11, El Cerrito 2, Pittsburg 2, Fresno County 136, Fresno 66, Reedley 3, Sanger 3, Orland 4, Imperial County 3, Kern County 78, Taft 7, Los Angeles County 70, Alhambra 3, Avalon 1, Beverly Hills 10, Compton 2, Glendale 33, Huntington Park 1, Inglewood 2, Long Beach 23, Los Angeles 188, Monrovia 1, Pasadena 14, Pomona 1, San Fernando 2, San Marino 1, Santa Monica 2, South Pasadena 2, Hawthorne 1, Signal Hill 1, Tujunga 1, Bell 2, Madera County 24, Madera 5, Marin County 2, Merced County 5, Gustine 8, Monterey County 11, Monterey 5, Salinas 11, Napa 1, Orange County 14, Anaheim 1, Orange 12, Santa Ana

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*From reports received on April 27th and 28th for week ending April 25th.

24, Placentia 8, Riverside County 13, Riverside 10, Sacramento County 6, Sacramento 19, San Bernardino County 5, Colton 3, San Bernardino 1, San Diego County 33, Chula Vista 4, Coronado 1, El Cajon 5, La Mesa 3, National City 45, Oceanside 1, San Diego 95, San Francisco 44, Stockton 8, San Luis Obispo County 18, Paso Robles 1, San Luis Obispo 2, Santa Barbara County 19, Santa Barbara 2, Santa Maria 4, Santa Clara County 4, Palo Alto 1, San Jose 3, Santa Clara 1, Santa Cruz County 9, Stanislaus County 5, Corning 4, Tulare County 1, Porterville 1, Ventura County 32, Ventura 2, Ojai 1, Yolo County 8.

Smallpox.

46 cases of smallpox have been reported, as follows: Walnut Creek 3, Delano 10, Los Angeles County 1, Long Beach 1, Los Angeles 6, Monterey Park 1, San Anselmo 2, Merced County 1, Orange 1, San Bernardino County 1, San Francisco 1, Stanislaus County 2, Modesto 2, Tehama County 5, Tulare County 2, Porterville 1, Tulare 1, Visalia 3, Yolo County 1, Marysville 1.

Typhoid Fever.

10 cases of typhoid fever have been reported, as follows: Oakland 1, Los Angeles 1, Santa Ana 1, Sacramento County 1, San Bernardino County 2, San Francisco 1, San Joaquin 1, California 2.**

Whooping Cough.

403 cases of whooping cough have been reported, as follows: Alameda County 3, Alameda 1, Albany 13, Berkeley 16, Oakland 37, Piedmont 1, San Leandro 2, Hercules 1, Pinole 1, Richmond 3, Fresno County 7, Kern County 1, Los Angeles County 26, Glendale 8, Huntington Park 1, Inglewood 2, Long Beach 2, Los Angeles 36, Pasadena 14, San Fernando 1, Santa Monica 1, Lynwood 2, South Gate 2, Tujunga 2, Madera 2, Chowchilla 11, Ukiah 2, Orange County 3, Anaheim 1, Orange 2, Riverside County 2, Riverside 10, Sacramento County 57, Sacramento 27, San Bernardino 6, San Diego County 5, San Diego 5, San Francisco 18, San Joaquin County 22, Lodi 9, Stockton 13, San Luis Obispo County 1, Santa Barbara 4, Santa Clara County 4, Palo Alto 4, San Jose 1, Stanislaus County 1, Oxnard 1, Yolo County 9.

Meningitis (Epidemic).

7 cases of epidemic meningitis have been reported, as follows: Los Angeles County 1, Los Angeles 2, Merced County 1, Sacramento County 1, San Francisco 2.

Leprosy.

Long Beach reported one case of leprosy.

Encephalitis.

Mendocino County reported one case of epidemic encephalitis.

Poliomyelitis.

7 cases of poliomyelitis have been reported, as follows: Los Angeles 2, San Bernardino County 1, Chula Vista 1, San Francisco 2, Tulare County 1.

Food Poisoning.

11 cases of food poisoning have been reported, as follows: Los Angeles County 2, Los Angeles 2, Maywood 1, Bell 3, San Francisco 3.

Undulant Fever.

Riverside County reported one case of undulant fever.

Septic Sore Throat.

9 cases of septic sore throat have been reported, as follows: Berkeley 3, Oakland 1, Taft 1, Ventura County 3, Fillmore 1.

**Cases charged to "California" represent patient ill before entering the State or those who contracted their illness traveling about the State throughout the incubation period of the disease. These cases are not chargeable to any one locality.

COMMUNICABLE DISEASE REPORTS

Disease	1931				1930			
	Week ending			Reports for week ending April 25 received by April 28	Week ending			Reports for week ending April 26 received by April 29
	April 4	April 11	April 18		April 5	April 12	April 19	
Chickenpox	441	577	631	494	734	668	361	446
Coccidioidal Granuloma	0	0	0	0	0	1	0	1
Diphtheria	59	73	52	56	61	70	48	49
Dysentery (Amoebic)	0	1	0	2	1	0	2	3
Dysentery (Bacillary)	1	2	0	4	0	0	0	3
Encephalitis (Epidemic)	1	0	0	1	1	2	0	1
Erysipelas	25	22	25	19	17	21	13	17
Food Poisoning	2	0	14	11	3	1	2	3
German Measles	17	22	33	48	40	15	11	22
Gonococcus Infection	124	106	134	102	135	156	113	117
Hookworm	1	0	0	0	3	0	0	0
Influenza	146	101	78	276	30	23	18	22
Jaundice (Epidemic)	0	5	0	0	0	0	0	0
Leprosy	0	1	2	1	0	1	0	0
Malaria	0	0	2	0	1	2	1	0
Measles	1,322	1,567	1,492	1,558	2,365	2,694	1,851	2,399
Meningitis (Epidemic)	10	8	4	7	13	11	11	5
Mumps	236	381	348	352	1,023	1,007	534	657
Ophthalmia Neonatorum	0	0	1	0	1	0	0	0
Paratyphoid Fever	0	0	0	0	0	2	1	0
Pellagra	1	3	2	2	2	2	3	3
Pneumonia (Lobar)	71	53	58	29	73	62	40	53
Poliomyelitis	3	4	5	7	4	3	0	3
Rabies (Animal)	14	32	16	14	25	10	18	18
Scarlet Fever	139	135	173	154	168	165	151	150
Smallpox	39	46	54	46	105	151	85	66
Syphilis	222	184	184	143	225	194	178	140
Tetanus	2	0	3	0	2	1	0	0
Trachoma	1	1	0	1	1	5	9	2
Trichinosis	0	2	1	0	14	7	4	2
Tuberculosis	250	206	251	170	216	220	254	155
Typhoid Fever	8	10	11	10	6	6	16	8
Undulant Fever	1	5	0	1	2	0	1	2
Whooping Cough	222	416	400	403	197	271	171	230
Septic Sore Throat	5	7	10	9	0	0	0	0
Totals	3,363	3,970	3,984	3,920	5,468	5,771	3,896	4,577

Measles continues on its high level.

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Whooping cough maintains its increasing prevalence.

* * *

Nine cases of septic sore throat were reported.

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Food poisoning cases are reported consistently.

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